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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,715	10/17/2003	Mei Chen	100205025-1	4628

22879 7590 02/07/2011
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EXAMINER	
SETH, MANAV	
ART UNIT	PAPER NUMBER
2624	

NOTIFICATION DATE	DELIVERY MODE
02/07/2011	ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MEI CHEN

Appeal 2009-005215
Application 10/687,715
Technology Center 2600

Before JOSEPH F. RUGGIERO, JOSEPH L. DIXON, and MAHSHID D. SAADAT, *Administrative Patent Judges*.

RUGGIERO, *Administrative Patent Judge*.

DECISION ON APPEAL[1]

STATEMENT OF THE CASE

Appellant appeals under 35 U.S.C. § 134 from the Final Rejection of claims 1-7 and 9-20, which are all of the pending claims. Claim 8 has been canceled. We have jurisdiction under 35 U.S.C. § 6(b).

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[1] The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the "MAIL DATE" (paper delivery mode) or the "NOTIFICATION DATE" (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

We affirm.

Rather than reiterate the arguments of Appellant and the Examiner, we refer to the Appeal Brief (filed April 23, 2008) and the Answer (mailed July 25, 2008) for the respective details. We have considered in this decision only those arguments Appellant actually raised in the Brief. Any other arguments which Appellant could have made but chose not to make in the Brief are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii).

Appellant's Invention

Appellant's invention relates to the estimation of the displacement of an object between a first image and a second image. Upon the generation of a plurality of search regions within the second image, an estimate of object displacement is determined for each of the search regions. The validity of each of the estimates is measured and compared and the best estimate corresponding to the object displacement is determined. (*See generally* Spec. 4:6-21).

Claim 1 is illustrative of the claimed invention and reads as follows:

1. A method for estimating a displacement of an object appearing in a first image and a second image, comprising:

ascertaining a respective candidate location of the object in each of a plurality of search regions in the second image;

for each of the search regions, determining a respective candidate displacement vector relating the respective candidate location of the object and a location of the object in the first image;

associating a respective confidence value with each of the candidate

displacement vectors; and

providing the estimated displacement of the object based at least in part on an evaluation of the confidence values.

The Examiner's Rejections

The Examiner's Answer cites the following prior art references:

Hanna	US 2001/0019621 A1	Sep. 6, 2001
Minami	US 6,380,986 B1	Apr. 30, 2002
Toklu	US 6,724,915 B1	Apr. 20, 2004 (filed Mar. 13, 1998)

Claims 1-7, 9, and 11-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Minami in view of Toklu.

Claim 10 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Minami in view of Toklu and Hanna.

PRINCIPLES OF LAW

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d 1071, 1073 (Fed. Cir. 1988). In so doing, the Examiner must make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966) (stating that 35 U.S.C. § 103 leads to three basic factual inquiries: the scope and content of the prior art, the differences between the prior art and the claims at issue, and the level of ordinary skill in the art). Furthermore,

> 'there must be some articulated reasoning with some rational underpinning to support the legal conclusion of

> obviousness' . . . [H]owever, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.

KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 418 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

ANALYSIS

Claims 1-7, 9, and 11-20

Appellant's arguments with respect to the obviousness rejection of representative independent claim 1 initially focus on the contention that Toklu does not overcome Minami's deficiency in disclosing "associating a respective confidence value with each of the candidate displacement vectors" as claimed.[2] According to Appellant (App. Br. 7), Toklu assigns a single respective confidence level of tracking to each image frame, not to multiple displacement vectors for a candidate object located in the same image.

We do not agree with Appellant. We find no error in the Examiner's analysis (Ans. 10) that determines that the object tracking search of Toklu's sub-templates, which have been divided from the object template, results in the claimed candidate displacement vectors (col. 10, ll. 22-24). Further, as explained by the Examiner, each of the candidate displacement vectors is

[2] Appellant argues rejected claims 1-7, 9, and 11-20 together as a group and makes particular reference only to independent claim 1. *See* App. Br. 6-12. Accordingly, we select claim 1 as representative. *See* 37 C.F.R. § 41.37(c)(1)(vii).

assigned a measure of confidence, i.e., a confidence value, in the form of a correlation value or mean square error (MSE) value (Fig. 1, steps 130 and 150; col. 10, ll. 17-29).[3] Accordingly, while Appellant is correct that Toklu assigns a single confidence level of tracking to each image frame which is continually updated, Toklu's disclosure nonetheless supports the Examiner's determination that a confidence value is applied to each of the multiple candidate displacement vectors.

We also do not agree with Appellant (App. Br. 8) that Minami does not disclose the candidate displacement vector determination feature of claim 1. Similar to the disclosure of Toklu, while Minami discloses that a single wide area motion vector is determined, a candidate displacement vector search through each of a plurality of narrow areas is utilized to determine the wide area motion vector (col. 12, ll. 25-41).

Lastly, we are unpersuaded by Appellant's contention (App. Br. 8-10) that, since Minami's reference vectors are combined into a single final reference vector, the ordinarily skilled artisan would not have any reason to associate respective confidence values with the individual reference vectors. Contrary to Appellant's contentions, we find that the Examiner's stated position (Ans. 11-12) provides a valid articulated line of reasoning with a rational underpinning to support the legal conclusion of obviousness for the proposed combination of Minami and Toklu. *See KSR*, 550 U.S. at 418. We agree with the Examiner that the application of Toklu's candidate displacement vector confidence value determination teaching to the

[3] Appellant's disclosure mentions a "correlation" method for measuring the validity of candidate displacement vector estimates. (Specification, 13:10-13).

intermediate stage reference vectors of Minami would improve the reliability of the reference vector determination, and would be recognized by the ordinarily skilled artisan as an obvious enhancement to the system of Minami.

For the above reasons, we sustain the Examiner's 35 U.S.C. § 103(a) rejection of representative independent claim 1, as well as claims 2-7, 9, and 11-20 not separately argued by Appellant.

Claim 10

We also sustain the Examiner's obviousness rejection of dependent claim 10 in which the Hanna reference is applied to the combination of Minami and Toklu to address the optical flow analysis feature of the rejected claim. Appellant has made no separate arguments for the patentability of claim 10 but, instead, has relied upon arguments made with respect to independent claim 1, which arguments we have found to be unpersuasive.

CONCLUSION OF LAW

Based on the analysis above, we conclude that the Examiner did not err in rejecting claims 1-7 and 9-20 for obviousness under 35 U.S.C. § 103(a).

DECISION

We affirm the Examiner's decision rejecting claims 1-7 and 9-20 under 35 U.S.C. § 103(a).

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv) (2010).

AFFIRMED

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